

**RAYMOND B.
CATTELL**

**A New Morality
from Science:
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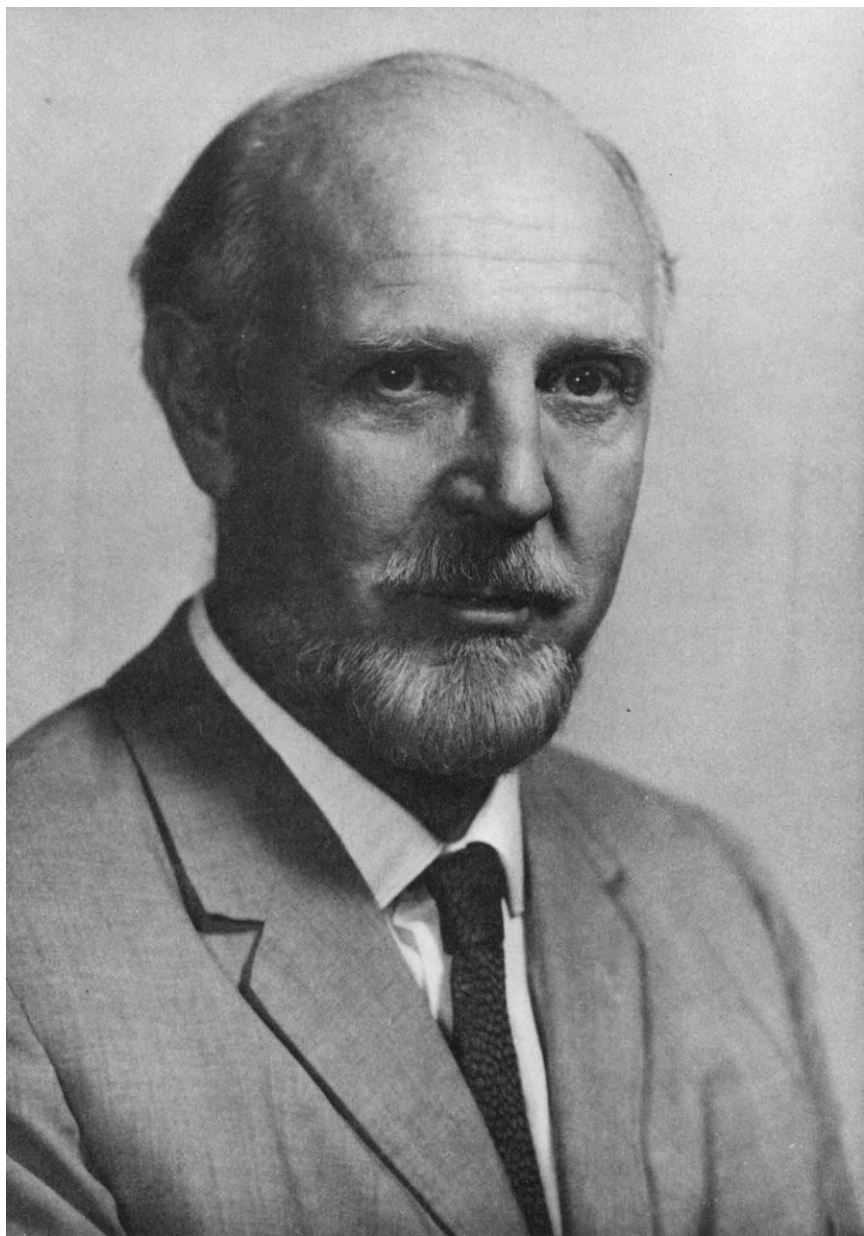
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A New Morality from Science: Beyondism

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Raymond B. Cattell

*A New Morality from Science:
Beyondism*

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Preface

Doubtless the thoughts of many scientific men are converging today on the possibility that ethical values might, in some way, be erected on the firm foundation of science. My own belief in this possibility was tentatively expressed some forty years ago in my first book, *Psychology and Social Progress*, in what I then called—and continue to call here—cooperative competition. That book was written primarily to convince the general public (there being then six men in Britain whose full-time profession it was to research in psychology) that advance in psychology as a science was vital to mankind. It argued that political rules-of-thumb were no longer a sufficient basis for social construction in modern societies.

However, I was under no illusion that fuller knowledge alone would suffice. Indeed, as men set aside their perennial repetitions of blind “solutions” and become radically more creative, they may waste their time on strife even more than before, for progress is something about which good men disagree sharply and bad men are indifferent. Pasteur had urged his politically contentious students, “Vivez dans la calme des laboratoires”; but the disciplined fair-mindedness and dedication to truth which brought serenity there—the belief that all would end well in the affairs of science as such—could guarantee nothing if we could not apply them to the pursuit of moral certainties too.

If the reader of a preface is entitled to some glimpse of the author and the machinery of construction of the book, then I have to tell him that my belief then expressed that a solution to ethics lies in science has never deserted me. But pursuit of the possibilities has been grievously interrupted. Between my 1933 book, which might be called a devoted

work of late adolescence, and the present book stretches a life of scholarship and research, issuing in thirty books and some three hundred and forty articles in technical branches of experimental, clinical, personality, social, and methodological-statistical areas of psychology. Beneath these intellectually detached productions ran the subterranean heat of the original conviction which brought me from chemistry to psychology, breaking out only in three brief eruptions, a discussion series paperback on psychology and morals (1938), an ethics chapter in a symposium on science and social reform (1944), and an article (1950b) explicitly, but baldly, defining the concept of Beyondism as now developed here. My excuse for so long neglecting what I felt to be so important—and also for what may be a haste and lack of finish in this final production—is the daily unintermittible work of the laboratory. When hunting with a keen pack of fellow researchers, the chase cannot be stopped. Besides, one has misgivings about one's right to neglect contributions which, however small, constitute concrete bits of new knowledge in order to go off on some speculative venture that may prove just one more of philosophy's wild goose chases.

An accumulation of three bleak realizations eventually forced me to take painful leave of my good research companions. First, it became increasingly clear over the years that no one in the social sciences was actually getting down to the ethics problem in the fundamental way that it seemed to me it required. My "asides" on the matter mentioned above, after some moments of puzzled discussion by a few colleagues, had been put aside as if they fitted into no customary mode of thinking. Second, from observing that few men and fewer women could make any sense out of it, I perceived that a much more systematic introduction and far more illustration to make the setting and the application more real in everyday life were necessary. And granting that three score years and ten is a proper innings, I knew that a task of this large magnitude could not be postponed. Third, and more happily, I experienced those quickenings in this area of thought which tell an author, as surely as a pregnant woman, that a live entity is ready to be born.

My first reason—that social scientists have neglected to face the job—may be questioned, with surprise, by some social scientists. They will claim that sciences—and especially the social sciences—have never been more concerned with values and a sense of social responsibility than over the last fifty years—and, especially, over the last decade. They will point out that the meetings of the American Association for the Advancement of Science have been distraught for the last four or five years with debates

about the social and moral duties of science. To this I answer, "Yes, but in precisely the wrong sense". These social scientists complacently believe that they have the moral values already in their hands—Christianity, Democracy, Humanism, or whatever—and that the only problem is one of informing science with our current brand of "revealed" morality. To a scientist whose thinking has not, by habit, become compartmentalized, however, the religious and intuitive systems which gave sanction to these values themselves belong to a pre-scientific, dogmatic era. Shocking as it may seem, the traditional, revered values may themselves be wrong. Indeed, we may be engaged in the very dangerous process of pouring the new wine of science into the old bottles of "revealed" theology. The movement has to be in the opposite direction.

To one who has deliberately, temporarily kept himself politely silent, but basically quite agnostic with regard to many fervent popular assumptions, it has seemed that religious and scientific truth must be ultimately reducible to one truth, and that is likely to be by scientific discovery. It is not, therefore, a question of bringing morality into science, as these social scientists have supposed, but of developing morality *out* of science. The idea evokes less indignation now than it did in my 1933 book; but nine out of ten people still find it hard to follow the argument, and prefer to avoid the difficulty. I still cannot realistically expect that it will evoke the necessary patient thought and serious research except among a small minority. All original thought and experience is lonely—as some of the most original scientists and artists have ruefully, but reliably, confessed. And as for the *reception* of ideas even within my own limited and specialized research contributions, it has been perfectly clear that the more trivial and banal among them have been better received than those showing more original thought or offering a more fundamental and subtle solution to an old problem.

But this is not the only reason why I have allowed forty years to go by before returning to a fuller scale of presentation, for it is my experience in scientific work that fragile ideas brought too early into the market place of general discussion and debate are often coarsened and lost rather than developed. In the minds of those who hear them—and, alas, frequently also in the minds of those who attempt to propound them—what is really new gets stamped into the gross common coinage of existing verbal conceptions—as Francis Bacon complained—with the standard misconceptions of the period forever imprinted upon them. Physical isolation is not essential for intellectual incubation, but it helps; and I am indebted to a granite eyrie in the misty Dartmoor of my youth, as well as to my

ridge in the Rocky Mountains, where much of this was written, for the necessary solitude.

Communication, whenever one man is asked by another to see matters of everyday life from a strange new angle, faces two obstacles—a cognitive difficulty and an emotional insult—for the latter is unavoidable where values are concerned; and its inevitable presence compounds the difficulties in the former. To be sure, we aim to lessen the “insult,” in this case by asking the reader if he will momentarily hold his emotions in Euclidean detachment from the reasoned conclusions—as in some domain of make-believe—on such disturbing issues as war, sex, social rights, and the like. But the bulk of mankind “leads” with its heart and is, perhaps rightly, suspicious in everyday life of the heartless person who does not. So the reader is specifically being asked for a moment to step out of those useful “prejudices” of daily life and discipline himself to entertain some “as if” reasoning. Even so, the fact is that both the reader and the writer will have their emotionalities; and the writer confesses to some scarcely containable annoyance with those sociologists who have so long desecrated the temple of science by ignoring the evidence of human genetics. He is only a little less impatient with those humanists who judge the conclusions of traditional religion as “superstition,” while promulgating moral laws of their own, equally subjective, and, indeed, half the time borrowed from “revealed” religion.

This much autobiographical confession may be of help to the reader; but for the rest, this Preface will simply steer the reader regarding the structure of the book itself. The first part—Chapters 1 through 5—consists of a statement of the basic principles, but gives also some perspective on their historical roots and contrasts. The second part proceeds to their applications in the modern world—destructively, in terms of the existing systems with which they clash; constructively, in terms of the new institutions which they call for in the society of the future. The first part is presented with a definite logical sequence and dependency, as abstract principles, like geometry, can be. The second has to shape itself with respect to a wide range of particulars, and where the necessary research is rarely available to give the reliability required. The sequence of I and II would, admittedly, appeal to Euclid more than to a sophisticated educator like Herbart, for it leaves till last the matters of immediate interest to the ordinary reader instead of beginning with the familiar and that which is of daily relevance. But with new ideas, this logical sequence is the only one truly intelligible; and I can only promise the reader who finds this a bit demanding that he will come to the ginger-

bread ornament of current cultural “gossip” in due course. Actually, it is for Part II, despite perhaps its greater readability, that I feel more apologetic, for the wealth of detailed social scientific research that is needed to sustain particular conclusions there simply does not exist; and if it did, no book of this size could hope to document it.

Indeed, the writer is painfully aware of these and other shortcomings in a book that, in spite of being more difficult to write than thirty others he has worked upon, is also foredoomed to fall short more than these others of what it should be. For, over and above the shortage of scientific material, there is the greater problem of writing in general terms what should be written in technical terms and, indeed, in mathematical formulae. I am confident that one day it *will* be possible to make such a presentation and to write in elegant equations what has here often had to be put into contorted (and, as some will complain) repellent jargon. To popularize a mature and relatively finished science, like making a simplified sketch of a complex building, is difficult but possible. To write truthfully about an immature science is like attempting a condensed sketch of a building half erected and hidden by the construction scaffolding. The need for condensation of integration from such diverse and variously immature sciences as sociology, economics, history, psychometrics, clinical psychology, group dynamics, and behavior genetics has not helped elegance or literary grace.

Yet, when all is said, to bring into the field of discussion by intelligent and educated general readers these rough-hewn major ideas is more important than to aim at any perfection of a book as a book. The reader is asked to be a sympathetic midwife at the birth of ideas that are momentous for our time, and which he will encounter increasingly from other sources in the near future. In due course, each facet of this new science[1] of morality is likely to be developed in less cramped and more elegant form. Perhaps one may take consolation from the wisdom of Bacon that “as the births of living creatures at first are ill-shapen, so are all innovations.”

Although, as confessed above, I have deliberately shielded the incubation of the central concepts here from distortions through premature contacts with fashionable trends, yet it has been a pleasure to realize, especially in the last decade, that several original writers—they stand in my bibliography—have put out to sea in the general direction of my present explorations. The quality of thought in these writings—particularly in the use of genetics, in sophistication of evolutionary inference, in striving toward mathematical models, and, above all, in fearless integrity

of thought—is most heartening[2]. At the same time, it will be evident from the bibliography that I have also gone much further back into the past for good thought in this area than do my brother social psychologists when they commonly make up their references. The spirit of science is older than organized research, and great minds are too few in any one century to throw thirty centuries away.

Finally, for the reader's guidance, let me point out that, although concentration into bare essentials has often been taken as a necessary goal in the main text, I permitted myself that redundancy in echoing the text in the notes which good education and communication theory urge. The reader set for a fast pace should omit these; the reader who can browse a little and likes to get the flavor of repetition in new perspectives will, I hope, enjoy them. In any case, for the systematic student, I have set out, point by point, a summary in the last section of every chapter; and especially for the more abstract issues, I believe these condensations will contribute to clear perspective.

RAYMOND B. CATTELL

University of Illinois
March 1972

NOTES TO PREFACE

[1] The statement that we are watching the birth of a new science will naturally provoke the scientific reader to ask what its boundaries, its methods, and its professionally trained servants are likely to be. Hitherto, the area of social observations, inferences, and generalization here covered has been considered much too wide for the experimental social psychologist to whom I would give a central role. It has, at least traditionally, been the area of historians, sociologists, economists, and, also, of many writers "of no fixed professional abode." It is probably wise to demand that, if a scientist is to invade this area, it should be an experimental researcher, to get the full discipline of a scientific tradition; but, obviously, he must also be a psychologist experienced in social phenomena as viewed in history, sociology, and cultural anthropology, if his work is to have a comprehensive contact with the social data and issues involved. "Experimental," of course, should not be taken in the narrow "brass instrument" sense of "manipulation," for in multivariate experiment, as I have argued elsewhere (1966), there are elegant statistical methods which permit the social psychologist to approach history, political science, economics, and population genetics in an experimental spirit and in search of predictive laws. Unfortunately, though it is thus becoming increasingly evident that social psychology is logically the core science ultimately containing the explanatory principles needed in economics, sociology, and other relatively descriptive or specialized social sciences, social psychologists have a long way to go before they can make good this promise. It is with deep embarrassment that I, as a social psycho-

logist, have had to fall back in tackling this broad field on findings of so incomplete a nature and theories so close to mere surmise that I may be accused of having a split personality, with respect to the standards I express, for example, in my *Handbook of Multivariate Experimental Psychology*. However, I can only say that, in terms of factual support and soundness of basis in method, the theories I entertain are certainly no less reputable than those of, say, Marx, Russell, or Toynbee, with which they have to contend as present rivals in this area; and they are certainly closer in spirit to the tenor of scientific research. Fortunately, Beyondism, as here developed, does not attempt a greater precision than the scientific approximations used to support it warrant, for much of Part II is frankly given as conjective. Although its many developments, as in Part II, will need an immensely more organized realm of exact research to sustain them, the really indispensable central propositions in Part I are too broadly based across the domain of science to need detailed change. This very concern with the fundamentals of the structure has meant that its walls are bare. One would give much to see what even fifty years may do to the enrichment of its furnishings. One would like to know, for example, what a Haldane or Fisher of 2050 A.D. will have to tell about the mutual induction between culture patterns and genetic configurations; or to hear what a genius of the dynamic calculus of motivation has unravelled and confirmed by then about the relation of sexual moral patterns to cultural creativity.

[2] Despite these recent encouraging sounds of great and lively company, it remains true, as I said at the beginning, that the steep and thorny path of progress in this area is one which relatively few will follow. Consequently, I am more than usually indebted to those who have given help in shaping perspective and checking the clarity of communication. Notably, I wish to say how grateful I am to Professor J. L. Horn of the University of Denver for some profound psychological observations, to Professor J. R. Royce of the Center for Advanced Study in Theoretical Psychology for philosophical evaluations, to R. J. Throckmorton for the shrewd comments of an educational psychologist, to Professor Marilee Clore for stimulating criticisms from the standpoint of an historian, to Dr. H. Weckowitz for reactions of a political scientist, to Dr. Ivan Scheier for the wisdom of a practicing psychologist (given with the forthrightness of a former fellow author), and to Dr. Robert Graham (whose book, *The Future of Man*, appeared this year) for the practical wisdom of an executive who is also a scientist. Although at times they have disagreed with me and with each other, I am sure they have substantially reduced what Macaulay (1897) aptly described as those "mistakes [that] must reasonably be committed by early speculators in every science." I am greatly indebted to them for thus bringing the wisdom of a committee of social scientists to bear where exactitude is still not possible for the calculations of an individual.

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Part I Basic Principles of an Evolutionary Ethics

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CHAPTER 1

Three Gateways to the Understanding of Life

1.1 UNDERSTANDING LIFE: DISCOVERING MORAL GOALS

Culturally, we live in momentous times—times in which values are in a ferment. Our generation is cursed with the anguish of moral conflict and blest with an unprecedented opportunity for major reconstruction. How shall we train and mobilize our minds and souls for this confrontation?

The concern of every sane and thoughtful man with what life is about boils down to, “What am I?”, “Where am I?”, and “What ought I to do?”. The last question, which most distinguishes man from the lower animals, introduces moral values, which are the center of all values. For the highest type of *homo sapiens*, no question is so important as that of the moral purpose of life; and the deepest happiness is achieved only through some understanding of it. The aim of this book is to find out what our general scientific knowledge and the psychology of human nature have to say, in the freedom of the modern atmosphere, about the roots of morality.

To understand morality, we have to understand life itself as far as we can; and men have traditionally gone in at one of three gateways in seeking that understanding: religion, the arts, and science. After sympathetically examining the inspiration of religion; the intuitive, emotional message of the arts and literature; and the methods of truth-testing which have grown up in science, some of us at least, may be convinced that this last—the most austere and sometimes emotion-starved path—is actually the best. Nevertheless, before any such decision is made, it behooves us to look at the different modes of knowing and at our human equipment for knowing. Without losing ourselves in tomes of philosophy, we may yet

hope in this introductory chapter, to reach the main sense of the vast body of cogitation on this question. Thence we can legitimately move to our main theme, which is the derivation of ethics from science.

Far more people have taken their morality from religion than from any other source; and our first step should, therefore, be a naturalistic, and, hopefully, unprejudiced examination of what religion has meant, historically, psychologically, and as a logical basis for moral values.

1.2 A RIDDLE COUCHED IN THREE QUESTIONS

Among human cultural activities, religion has been one of the hardest and most pervasive in effects on everyday life, as that remarkable old catalogue *The Golden Bough* (Frazer, 1890) may remind us. Religion fathered the first profession; it fills vast sections of the world's libraries; and the spires, domes, and minarets that express its call on human devotion pierce the sky on countless horizons. It survived the disproof of the claim for God's children that they stand at the center of the universe. It rose again after the guillotine slash of rationalist logic at the French Revolution. It continues despite the inexorable advance of nineteenth and twentieth century science, which marches with the youthful militancy of new knowledge into the long sacred views about the nature of our world, the origins of life, and the manner of God's creativity.

The young are the hope of every new cultural development, yet religion and morality—except when dressed as a Crusade—have never been an enthusiasm of the young. At adolescence, the intelligent young become much concerned with morality and justice, but scarcely with the dogma and moral scruples of intuitive religion. Indeed, today, among the mainly scientifically educated adult generation of Western culture and the atheistic or secular Russian and Asian cultures, the religious spirit is barely tolerated, as a puzzling, and, at worst, misleading anachronism. Nevertheless, one must admit that whatever the social role of religion should or should not be, there must either be some tremendous and mysterious vitality in its ways of thinking and feeling, or some addictive weakness in human nature. This is surely true of the whole range from religious emotionalism to the philosophical religions, and, over time, from the pre-Socratic period, through Stoicism, Epicureanism, down to present Existential adjustments.

What is the common element in this persistent claim upon human thought? Surely, when dogma, ritual, priesthood, and ornate accretions of superstition are set aside, the common appeal of religions is not only that

they seem to answer to the same tormenting questions as do the sciences or the arts, but that they do in a way which gives richer emotional satisfaction. Throughout history, wherever the daily stress and struggle for survival eased—as when primitive man, the hunt finished and the food eaten, watched the lights go on in the quiet evening sky—vast and vague surmises would arise. The answers of religion, though not as astonishing as those later to be offered by science, satisfyingly filled the intellectual twilight. And even today, when science throws a brilliant arc light into our lives, it is still only through a crack in the door, and beyond this narrow beam we are still haunted by the wildest speculations.

Regardless of our opinions of the relative values of the answers from religions and other sources, we should recognize—though those born in the generations of intellectual warfare between science and religion may find it hard to do so—that the questions which religion and science have asked are virtually identical. First: “Where am I? What is the nature of this universe in which this small, pulsating bit of protoplasm finds itself?” Secondly: “What am I? What are the properties—the limitations, the needs, the full possibilities—of this bit of living matter I call myself?” Thirdly: “What shall I do?”

The first two questions concern the stage and the actor. But what is the play? What is the *purpose* of the individual’s appearance? Here the individual seeks an answer to, “What *ought* I to do?”; and religion gives him an answer in terms of a greater purpose and plan. The fact that science disagrees in several ways with the answer given by religion still does not detract from the debt we owe religion for having helped to raise the question. And the fact remains that the emotionally more primitive approach of religion has attracted the bulk of mankind to that gateway. Only in the last century of more universal and intellectually disciplined education has an increasing section of the population been able to tolerate or embrace with some enthusiasm the scientific world view. Our task is to examine the validities of these answers by science and by religion, as well as of that given in the more direct emotional answer of art.

In doing so, let us recognize that we shall encounter some obstacles from the fact that hitherto the majority of mankind has not been in the habit of attempting to reason individually and independently of authority on these questions. In earlier times—perhaps with a realistic regard for the average citizen’s lack of training—authorities have preferred to do the reasoning. Today, there is enough spent on education and enough leisure for large numbers seriously to devote themselves to fine reasoning on issues beyond the banal problems of everyday. Indeed, a truly partici-

pating, democratic culture can only be maintained on the basis of such moral sophistication.

Yet even in our fortunate age, the big questions, “Where am I?”, “What am I?”, and “Why am I?” tend to be set aside in the busy period of practical responsibilities between the brief fresh freedom of adolescence and the equally brief serenity of stocktaking in age. In the first place, the averagely intelligent majority find their early sensible and serious concern soon blunted and stultified by failure to get comprehensible answers. Later, distracted by the drain of economic needs, professional ambition, and family cares, they are compelled to settle for ready-made, approximate solutions. It is surely a sane solution to adjust to the approximate answer and the traditional authority—except for those whose vocation it is—as philosophers, priests, and scientists—to pursue the questions over all their lives. At least it was in other ages, though with the advance of the social sciences and the provision of leisure, there may now be both material and time for every citizen to become a serious student of these problems. Otherwise, for most people, questions of basic values rise into poignant illumination only when crises thrust upon them some sharp point of moral decision, some endurance of a crushing disappointment, a deep love affair, or the heard but unbelieving summons to one’s own imminent death. These, whom Thoreau believed to be “the mass of men” leading “lives of quiet desperation” can today, if they wish, find their way more surely to a serenity of reasoned insight. However, perhaps what is said in this book has its best chance of being useful to the intelligent who are also young in mind. These are readers ready to follow an argument wherever it may lead, yet disciplined enough to be critical in reasoning and mature enough to consider momentarily unpleasant conclusions.

The motive force to participate in this odyssey of social thought will, however, in most readers, spring from a realization that with the decline of the moral authority of revealed religion we are in imminent danger of entering a general moral morass. The mere advance of scientific knowledge about the workings of society cannot save us from that. No increase in the general level of education—still less any rise in the noise level of mass communication—can be a substitute for the patient and creative pursuit of necessary, new, ethical values.

1.3 CONCERNING THE COMPETENCE OF SCIENCE TO ANSWER

To the scientist, it would seem a natural conclusion that scientific research is, in principle, capable of approaching answers to all three of the above questions. Is not the word science, by its derivation, concerned with *knowing*; and knowing recognizes no artificial boundaries between the physical, biological, and psychological domains.

To the basic questions, "Who and what am I?", science returns the partial answer which the modesty and caution of its methods dictate, namely, that I am a member of a species *homo sapiens*, with an interesting position—anatomically, physiologically, and mentally—in the taxonomic tree of life. I am built of proteins—polypeptide chains—and minerals, according to a blueprint written in the genetic code of my chromosomes. By a process not unlike that in a chain of fire-crackers (but self-restoring), a vast number of electro-chemical signals circulate in the neurons of my brain; and, in some, as yet mysterious, way this generates awareness of the world around me and myself. Similarly, and with similar rather large unknowns admitted into its equations, science can tell me *where* I am; on a planet with the rare temperature suitable for life, circling a rather non-descript, middle-sized star, rather far out on the swirling arm of a galactic nebula, in a boundless space, illuminated by countless galaxies extending indefinitely—as far as the eye with its present technical aids can see.

Answers of this nature, enriched every year with new facets and heightened in precision, have been presented to the first two questions by mutually critically alert scientists; and except for doubts by epistemologists, whose business it is to ask how we know that we know (and whose viewpoint we shall duly take into account), there has been no real doubt about their acceptance. They are, moreover, given as factual systems that are admittedly incomplete, couched in theories that are recognized as likely to change in structure; and with the understanding that science proceeds by successive approximations.

But when we come to the third question, "In this defined setting, what ought this defined person to do?", the whole firmament of scientific and social discussion may well seem to go into convulsions. Throughout the nineteenth century (and much of the twentieth—as witness the Scopes trial), educated people agreed that science should deal with "*What* is life?" but not with "*Why*?". The revealed religions have exclaimed aghast that "science has nothing to do with defining moral values!" Strangely enough, surveys indicated that most scientists agreed with them. Drawbridge's